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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/764,091	CHIANG, ANN-SHYN	
	Examiner	Art Unit	
	Bernard Krasnic	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2004* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: The reference characters 110 – 160 respectively in Figure 1. The reference characters 310 – 350 respectively in Figure 3. The reference characters 410 – 460 respectively in Figure 4. The reference characters 812 – 860 respectively in Figure 8.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because of the use of the phrase "This invention is" in line 1. "This invention is about a microscope" should be -- A method about a microscope --.

Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:

Page 24: The title "M th d for Improving th Depth" should be -- Method for Improving the Depth --.

Page 21, claims 7 and 8: The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The limitations of "employing a single wavelength or a multiple wavelength activated light during the obverse scanning and the opposite scanning" should be disclosed in the specification without adding any new matter content.

Appropriate correction is required.

Claim Objections

5. Claims 1, 3-4, 9, and 13 are objected to because of the following informalities:

Claims 1 and 9, line 1 respectively: "improving the depth" should be -- improving a depth --.

Claim 3, line 9, claim 9, line 11 respectively: "adjusting the relative shift" should be -- adjusting a relative shift --.

Claim 3, line 14, claim 9, line 12 respectively: "positioning the overlapping" should be -- positioning an overlapping --.

Claims 4 and 13, line 2 respectively: "chosen by Sobel edge" should be -- chosen by a Sobel edge --.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson (US 7,197,355 B2) in view of Sharpe ("Optical Projection Tomography as a

tool for 3D microscopy and gene expression studies" – SCIENCE, April 2002, pages 541-545).

Re Claim 1: Nelson discloses a method for improving the depth of field and resolution / microscopic object may be measured using the reconstructed 3D image of microscopy / variable-motion optical tomography VOT, comprising fixing a sample / cell (1) (see Figs. 1 and 4, col. 1, lines 34 and 37-40, col. 2, lines 8-10, 15-16, 25-30, 41-45, col. 3, lines 61-67, col. 4, lines 8-22 and 31-41 and 62-67, col. 5, lines 1-12 and 53-67, col. 6, lines 1-45, abstract); performing an obverse scanning / 0 degrees rotation view capture and an opposite scanning / 180 degree rotation view capture to the sample / cell for obtaining obverse scanning images and opposite scanning images (see Figs. 1 and 4, col. 1, lines 34 and 37-40, col. 2, lines 8-10, 15-16, 41-45, col. 3, lines 61-67, col. 4, lines 8-22 and 31-41 and 62-67, col. 5, lines 1-12 and 53-67, col. 6, lines 1-45, abstract, the tube with the enclosed cell may be rotated by 360 degrees and the VOT may take one or a plurality of projection images in order to reconstruct a final 3D image, the projection image in this case are the obverse projection image corresponding to 0 degree rotation and the opposite projection image corresponding to the 180 degree rotation); adjusting / stacking the opposite scanning images by referring to the obverse scanning images (see Figs. 1 and 4, col. 1, lines 34 and 37-40, col. 2, lines 8-10, 15-16, 41-45, col. 3, lines 61-67, col. 4, lines 8-22 and 31-41 and 62-67, col. 5, lines 1-12 and 53-67, col. 6, lines 1-45, abstract, stacking definitely needs some type of aligning of the images for the stack which creates the reconstructed 3D image to make sense); and combining / image reconstruction the obverse and the opposite scanning images to

obtain a complete three-dimensional image / reconstructed 3D image (see Figs. 1 and 4, col. 1, lines 34 and 37-40, col. 2, lines 8-10, 15-16, 41-45, col. 3, lines 61-67, col. 4, lines 8-22 and 31-41 and 62-67, col. 5, lines 1-12 and 53-67, col. 6, lines 1-45, abstract).

However, Nelson fails to disclose or fairly suggest the method is toward microscopy (Nelson's suggestion of constructing a three-dimensional image within microscopic objects using tomography silently suggests the method being toward microscopy).

Sharpe discloses the method is toward microscopy (see abstract, tomography is used to generate three-dimensional data of the specimen and typical techniques are also done using confocal microscopy).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nelson's method by using Sharpe's teachings by including the ability use the confocal microscopy to accomplish Nelson's method of reconstructing a 3D image in order to allow imaging of thick samples without blurring by rejecting light from out-of focus planes (see Osipchuk et al US 6,628,385 B1, col. 2, lines 11-16, the supreme court decision on KSR INTL CO v. TELEFLEX INC teaches that the motivation for obviousness may be from another reference, Osipchuk, as long as the motivation is "well within the grasp of a person of ordinary skill in the relevant art and that the benefit of doing so would be obvious" which in this case it definitely is).

Re Claim 2: Nelson further discloses the sample is fixed with embedding gel / gel (54) (col. 2, lines 53-55).

Re Claim 6: Sharpe further discloses said obverse scanning and said opposite scanning are performed with a confocal microscope (see abstract, generating three-dimensional data of the specimen are typically done using confocal microscopy).

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson as modified by Sharpe as applied to claims 1-2, and further in view of Gagnon et al (US 7,027,628 B1). The teachings of Nelson as modified by Sharpe have been discussed above.

Re Claim 3: However Nelson (Nelson does disclose the obverse and opposite images and stacking by alignment) as modified by Sharpe fails to disclose or fairly suggest choosing one image from the obverse scanning images; comparing said image with every opposite scanning images; employing fast Fourier Transferring theory for finding images of the opposite scanning images most similar to said image chosen from the obverse scanning image; adjusting the relative shift and rotation of said images of the opposite scanning images most similar to said image chosen from the obverse scanning images (Nelson's basic stacking by alignment method); choosing an area suitable for performing relative matching; and positioning the overlapping position of the obverse

scanning images and the opposite scanning images on Z axial (Nelson's basic stacking by alignment method).

Gagnon discloses choosing one image from the obverse scanning images (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked); comparing said image with every opposite scanning images (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked); employing fast Fourier Transferring theory / Fourier Transform techniques for finding images of the opposite scanning images most similar to said image chosen from the obverse scanning image (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity); adjusting the relative shift and rotation / alignment of images in the x, y, z dimensions of said images of the opposite scanning images most similar to said image chosen from the obverse scanning images (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity, using the scores an alignment of the images in the x, y, z dimensions is achieved); choosing an area / region suitable for performing relative matching / calculating scores within regions (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity, using the scores an alignment

of the images in the x, y, z dimensions is achieved); and positioning the overlapping position / stacking or stitching of the obverse scanning images and the opposite scanning images on Z axial / stitched along the z dimension (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity, using the scores an alignment of the images in the x, y, z dimensions is achieved).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Nelson's method as modified by Sharpe, using Gagnon's teachings by including the specific steps of comparing and adjusting using the Fourier Transform theory and finally positioning the overlapping position for stacking or stitching in order to provide a microscopic view of a biological sample allowing early detection and treatment of disease related conditions (see Gagnon, col. 1, lines 27-36, col. 14, lines 2-4).

9. Claims 9-12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson and further in view of Sharpe and Gagnon.

Re Claim 9: Nelson discloses Nelson discloses a method for improving the depth of field and resolution / microscopic object may be measured using the reconstructed 3D image of microscopy / variable-motion optical tomography VOT, comprising fixing a sample / cell (1) (see Figs. 1 and 4, col. 1, lines 34 and 37-40, col. 2, lines 8-10, 15-16,

25-30, 41-45, col. 3, lines 61-67, col. 4, lines 8-22 and 31-41 and 62-67, col. 5, lines 1-12 and 53-67, col. 6, lines 1-45, abstract); performing an obverse scanning / 0 degrees rotation view capture and an opposite scanning / 180 degree rotation view capture to the sample / cell for obtaining obverse scanning images and opposite scanning images (see Figs. 1 and 4, col. 1, lines 34 and 37-40, col. 2, lines 8-10, 15-16, 41-45, col. 3, lines 61-67, col. 4, lines 8-22 and 31-41 and 62-67, col. 5, lines 1-12 and 53-67, col. 6, lines 1-45, abstract, the tube with the enclosed cell may be rotated by 360 degrees and the VOT may take one or a plurality of projection images in order to reconstruct a final 3D image, the projection image in this case are the obverse projection image corresponding to 0 degree rotation and the opposite projection image corresponding to the 180 degree rotation); adjusting / stacking and positioning / stacking the overlapping position (see Figs. 1 and 4, col. 1, lines 34 and 37-40, col. 2, lines 8-10, 15-16, 41-45, col. 3, lines 61-67, col. 4, lines 8-22 and 31-41 and 62-67, col. 5, lines 1-12 and 53-67, col. 6, lines 1-45, abstract, stacking definitely needs some type of aligning of the images for the stack which creates the reconstructed 3D image to make sense); and combining / image reconstruction the obverse and the opposite scanning images to obtain a complete three-dimensional image / reconstructed 3D image (see Figs. 1 and 4, col. 1, lines 34 and 37-40, col. 2, lines 8-10, 15-16, 41-45, col. 3, lines 61-67, col. 4, lines 8-22 and 31-41 and 62-67, col. 5, lines 1-12 and 53-67, col. 6, lines 1-45, abstract).

However, Nelson fails to disclose or fairly suggest the method is toward microscopy (Nelson's suggestion of constructing a three-dimensional image within microscopic objects using tomography silently suggests the method being toward

microscopy); choosing one image A from the obverse scanning images; comparing said image with every opposite scanning images; finding images K of the opposite scanning images most similar to said image A; adjusting the relative shift and rotation of said images K (Nelson's basic stacking by alignment method); positioning the overlapping position of the obverse scanning images and the opposite scanning images on Z axial (Nelson's basic stacking by alignment method).

Sharpe discloses the method is toward microscopy (see abstract, tomography is used to generate three-dimensional data of the specimen and typical techniques are also done using confocal microscopy).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nelson's method by using Sharpe's teachings by including the ability use the confocal microscopy to accomplish Nelson's method of reconstructing a 3D image in order allow imaging of thick samples without blurring by rejecting light from out-of focus planes (see Osipchuk et al US 6,628,385 B1, col. 2, lines 11-16, the supreme court decision on KSR INTL CO v. TELEFLEX INC teaches that the motivation for obviousness may be from another reference, Osipchuk, as long as the motivation is "well within the grasp of a person of ordinary skill in the relevant art and that the benefit of doing so would be obvious" which in this case it definitely is).

However, Nelson as modified by Sharpe still fails to disclose or fairly suggest choosing one image A from the obverse scanning images; comparing said image with every opposite scanning images; finding images K of the opposite scanning images most similar to said image A; adjusting the relative shift and rotation of said images K

(Nelson's basic stacking by alignment method); positioning the overlapping position of the obverse scanning images and the opposite scanning images on Z axial (Nelson's basic stacking by alignment method)

Gagnon discloses choosing one image A from the obverse scanning images (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked); comparing said image with every opposite scanning images (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked); finding images K of the opposite scanning images most similar to said image A (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity using the Fourier Transform techniques); adjusting the relative shift and rotation / alignment of images in the x, y, z dimensions of said images K (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity, using the scores an alignment of the images in the x, y, z dimensions is achieved); positioning the overlapping position / stacking or stitching of the obverse scanning images and the opposite scanning images on Z axial / stitched along the z dimension (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked,

the consideration calculates scores of similarity, using the scores an alignment of the images in the x, y, z dimensions is achieved).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Nelson's method as modified by Sharpe, using Gagnon's teachings by including the specific steps of comparing and adjusting using the Fourier Transform theory and finally positioning the overlapping position for stacking or stitching in order to provide a microscopic view of a biological sample allowing early detection and treatment of disease related conditions (see Gagnon, col. 1, lines 27-36, col. 14, lines 2-4).

Re Claim 10: Nelson further discloses the sample is fixed with embedding gel / gel (54) (col. 2, lines 53-55).

Re Claim 11: Gagnon further discloses said images K are chosen with the fast Fourier Transferring theory / Fourier Transform techniques (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity using the Fourier Transform techniques, Fast Fourier Transform or the FFT is just a fast computer method of implementing the Fourier Transform).

Re Claim 12: Gagnon further discloses choosing an area / region suitable for performing relative matching / calculating scores within regions (see col. 13, lines 52-59

and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity, using the scores an alignment of the images in the x, y, z dimensions is achieved).

Re Claim 14: Gagnon further discloses the shift in said step of adjusting the relative shift and rotation of said image K is on X Y plane / alignment of images in the x, y dimensions (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity, using the scores an alignment of the images in the x, y dimensions is achieved).

Re Claim 15: Gagnon further discloses the rotation in said step of adjusting the relative shift and rotation of said image K is pivoted with Z axial / stitched along the z dimension (see col. 13, lines 52-59 and 39, col. 14, lines 2-4, col. 2, lines 31-39, each combination of overlap is considered for the images which are to be stitched or stacked, the consideration calculates scores of similarity, using the scores an alignment of the images in the x, y, z dimensions is achieved).

10. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson as modified by Sharpe and Gagnon, and further in view of Goris ("Automatic

registration and alignment on a template of cardiac stress & rest SPECT images" – IEEE, 1996, pages 212-221). The teachings of Nelson as modified by Sharpe and Gagnon have been discussed above.

Re Claim 4: However, Nelson as modified by Sharpe and Gagnon fails to disclose or fairly suggest performing relative matching is chosen by Sobel edge checking concept.

Goris discloses performing relative matching / matching step is chosen by Sobel edge checking concept / edge detector (see pages 214-215, Sections 3 – 3.2, Goris discloses matching images using a Canny-Deriche edge detector, although different from a Sobel edge detector, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the Canny-Deriche edge detector for a Sobel edge detector because they both detect edges just using different filters).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Nelson's method as modified by Sharpe and Gagnon, using Goris's teachings by including the Sobel edge checking concept for matching in order to avoid unwanted results from intensity distribution comparisons for matching (see Goris, page 214, Section – 3 Description of the method, lines 1-4).

As to claim 13, the discussions are addressed with respect to claim 4.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson as modified by Sharpe, and further in view of Centonze ("Multiphoton excitation provides

optical sections from deeper within scattering specimens than confocal imaging" – Biophysical Journal, vol. 75, October 1998, pages 2012-2024). The teachings of Nelson as modified by Sharpe have been discussed above.

Re Claim 5: However, Nelson as modified by Sharpe fails to disclose or fairly suggest said obverse scanning and said opposite scanning are performed with a multiple photon microscope.

Centonze discloses said obverse scanning and said opposite scanning are performed with a multiple photon microscope (see abstract, the confocal microscopy as disclosed by Sharpe or the multiphoton microscope may be used to provide images of the specimen).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Nelson's method as modified by Sharpe, using Centonze's teachings by replacing Sharpe's confocal microscopy with a multiphoton microscope in order to provide good quality images from deeper within the specimen (see Centonze, abstract).

12. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson as modified by Sharpe, and further in view of Webb ("Measurement of two-photon excitation cross sections of molecular fluorophores with data from 690 to 1050 nm" – Optical Society of America, vol. 13, no. 3, March 1996, pages 481-491). The teachings of Nelson as modified by Sharpe have been discussed above.

Re Claim 7: However, Nelson as modified by Sharpe fails to disclose or fairly suggest employing a single wavelength activated light during the obverse scanning and the opposite scanning.

Webb discloses employing a single wavelength activated light during the obverse scanning and the opposite scanning (see table 2, one wavelength is considered for the specimen).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Nelson's method as modified by Sharpe, using Webb's teachings by including the single wavelength activated light in order to gain the advantage over the conventional confocal microscopy from its intrinsic three-dimensional resolution and the absence of background fluorescence (see Webb, page 481, Section – 1 INTRODUCTION, paragraph two "Denk et al. succeeded ...", lines 5-8).

Re Claim 8: However, Nelson as modified by Sharpe fails to disclose or fairly suggest employing a multiple wavelength activated light during the obverse scanning and the opposite scanning.

Webb discloses employing a multiple wavelength activated light during the obverse scanning and the opposite scanning (see figure 2, multiple wavelengths [690nm to 1050nm are active] is considered for the specimen).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Nelson's method as modified by Sharpe,

using Webb's teachings by including the multiple wavelength activated light in order to gain the advantage over the conventional confocal microscopy from its intrinsic three-dimensional resolution and the absence of background fluorescence (see Webb, page 481, Section – 1 INTRODUCTION, paragraph two "Denk et al. succeeded ...", lines 5-8).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fauver et al discloses a method and apparatus of shadowgram formation for optical tomography; Chu et al discloses an optical tomography of small moving objects using time delay and integration imaging; Chiang discloses an aqueous tissue clearing solution; Clune et al discloses methods and systems for correcting image misalignment; Pawley discloses a handbook of biological confocal microscopy; Kurazume discloses a simultaneous 2D images and 3D geometric model registration for texture mapping utilizing reflectance attribute; Chen discloses a two-level model averaging techniques in drosophila brain imaging.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Krasnic whose telephone number is (571) 270-1357. The examiner can normally be reached on Mon-Thur 8:00am-4:00pm and every other Friday 8:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bernard Krasnic
May 14, 2007

JINGGE WU
SUPERVISORY PATENT EXAMINER